

# IAA Mobility 2025: MAHLE unveils range-extender system and thermal management module

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At the IAA Mobility 2025 event in Munich, MAHLE is showcasing its innovations aimed at electrification and sustainable powertrain solutions designed to reduce CO2 emissions in road traffic. These innovations included a new range-extender system and a thermal management module for electric vehicles. The range-extender system features a high-voltage generator that can extend a battery-electric vehicle's range up to 1,350 km. The thermal management module includes an integrated heat pump, potentially increasing vehicle range by up to 20% even at low temperatures. Additionally, MAHLE displayed components for an internal combustion engine (ICE) capable of running on 100% ethanol, which can significantly reduce CO2 emissions from existing vehicles.



*Source: Getty Images Plus/ coffeekai*

MAHLE's approach emphasizes technological diversity, which CEO Arnd Franz said is necessary for climate protection, competitiveness and employment in Europe. The company's strategy includes innovations from electrification, thermal management and sustainable ICEs. MAHLE expects the market for EVs with range extenders to grow significantly, particularly in mainland China. Its range-extender technology allows for a more cost-effective battery size and reduces charging times on long trips. The system boasts features such as a permanently excited electric motor and biofuel compatibility.

The thermal management module addresses e-mobility range challenges by enhancing cooling and heating efficiency with components such as an air-conditioning compressor and heat exchanger. MAHLE also introduced a bionic radial blower for air-conditioning systems, inspired by penguin flippers, offering increased energy efficiency and quieter operation.

MAHLE's chargeBIG infrastructure supports scalable cable-connected charging, with thousands of installations in Germany and France, and now includes a mobile charging solution. Its inductive charging system offers a convenient alternative to cable-connected charging, with efficiency rates over 92%. At the event, MAHLE also presented its E-HEALTH Charge battery diagnostics unit, capable of measuring high-voltage battery performance within 15 minutes, and showcased its Workshop Heroes Van, providing hands-on experience with new service equipment for EVs.

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